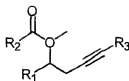


Claims

What is claimed is:

1. A method for producing a desoxyepothilone, which comprises fermentation of an epothilone producing microorganism in the presence of an inhibitor of an epothilone epoxidase.
2. The method of Claim 1, wherein said desoxyepothilone is epothilone D.
3. The method of Claim 1, wherein said desoxyepothilone is epothilone C.
4. The method of Claim 1, wherein said desoxyepothilone is a mixture of epothilone C and epothilone D.
5. The method of Claim 1, wherein said microorganism is *Sorangium cellulosum*.
6. The method of Claim 1, wherein said inhibitor is 2-methyl-1,2-di-3-pyridyl-1-propanone.
7. The method of Claim 1, wherein said inhibitor is selected from the group consisting of ketoconazole, itraconazole, miconazole, furafylline, sulfaphenazole, proadifen, and debrisoquin.
8. The method of Claim 1, wherein said inhibitor is a member of the class of acetylenic mechanism-based irreversible inhibitors.

9. The method of Claim 8, wherein said inhibitor is



wherein R₁ is aryl, heterocycle, aryl-CH=CR₄, or heterocycle-CH=CR₄; R₂ is lower alkyl, preferably C₁₋₃ alkyl; R₃ is H or is lower alkyl, preferably methyl, or ethyl; and R₄ is H or is lower alkyl, preferably methyl.

10. The method of Claim 9, wherein said inhibitor is selected from the group consisting of 1-phenyl-3-butyne-1-yl acetate, 1-phenylhexen-5-yn-3-yl acetate, 1-(3-pyridyl)-3-butyne-1-yl acetate 1-(3-pyridyl)hexen-5-yn-3-yl acetate, 1-(4-pyridyl)-3-butyne-1-yl acetate, and 1-(4-pyridyl)hexen-5-yn-3-yl acetate.

11. The method of Claim 1, wherein said microorganism is *Sorangium cellulosum*, and said inhibitor is selected from the group consisting of 1-phenyl-3-butyne-1-yl acetate, 1-phenylhexen-5-yn-3-yl acetate, 1-(3-pyridyl)-3-butyne-1-yl acetate 1-(3-pyridyl)hexen-5-yn-3-yl acetate, 1-(4-pyridyl)-3-butyne-1-yl acetate, and 1-(4-pyridyl)hexen-5-yn-3-yl acetate.

12. A recombinant *Sorangium cellulosum* host cell comprising an *epoK* gene that has been inactivated by mutation that produces epothilone C or epothilone D or both.

13. The host cell of Claim 12 that produces more epothilone C and epothilone D than epothilone A and epothilone B.

14. The host cell of Claim 12 that does not produce epothilone A or epothilone B.

15. The host cell of Claim 12 that produces epothilone D but not epothilone C.
16. The host cell of Claim 12 that produces epothilone C but not epothilone D.

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